

REMARKS

Status of Claims:

Claims 8-33, 41-66, and 68-71 remain withdrawn. Claim 4, 5, and 38 are cancelled. New claims 73-77 are added. Thus, claims 1-3, 6-7, 34-37, 39-40, 67, and 72-77 are present for examination.

Obviousness Rejection:

Claims 1-7, 34-40, 67, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roux article entitled "Cooperative Analysis of Maps and Aerial Images for Urban Scene Description" (as cited in the IDS filed 10/14/04) (hereinafter Roux).

With respect to claims 1-3, 6-7, 34-37, 39-40, 67, and 72, as amended, the rejection is respectfully traversed.

Independent claim 1, as amended, recites a stereo image processing apparatus subjecting first image data obtained from a first flying object (airframe) during a first time period to stereo matching processing to generate first three-dimensional data and subjecting second image data obtained from a second flying object during a second time period different from said first time period to stereo matching processing to generate second three-dimensional data, comprising:

“data correcting means for correcting erroneous data including at least noises and losses in inputted three-dimensional data by using information of external shapes of buildings obtained from map data, said data correcting means inputting said first three-dimensional data to provide first modified three-dimensional data and inputting said second three-dimensional data to provide second modified three-dimensional data;

map data storing means for storing said map data;

data storing means for storing said first modified three-dimensional data;

data comparing means for comparing said first modified three-dimensional data stored in said data storing means with said second modified three-dimensional data; and

map data modifying means for modifying said map data stored in said map data storing means based on differential information obtained from said data comparing means to provide modified two-dimensional map data.”
(Emphasis Added)

A stereo image processing apparatus including the above-quoted features has the advantage that first three-dimensional data generated from first image data obtained by a first flying object during a first time period can be corrected based on information of external shapes of buildings included in map data to produce first modified three-dimensional data. Also, second three-dimensional data generated from second image data obtained by a second flying object during a second time period can be corrected based on information of external shapes of buildings included in the map data to produce second modified three-dimensional data. The first modified three-dimensional data and the second modified three-dimensional data can then be compared to produce differential information, and the map data can be modified based on the differential information to produce modified two-dimensional map data.

Such an apparatus would allow for satellite images obtained by photographing a same point at different times to be used to update map data. For example, three dimensional data obtained by past satellite images of an area (FIGs. 34-35) could be compared with three dimensional data obtained by current satellite images of the same area (FIGs. 36-37) and the result of the comparison (FIG. 38) could be used to update a two-dimensional map (FIG. 39). Thus, the map could be updated to reflect new buildings that have been built and old buildings that have been demolished or changed since the map was created based on satellite photograph data. (Specification; page 67, line 20 to page 71, line 4).

Roux neither discloses nor suggests a stereo image processing apparatus including the above-quoted features. Roux presents a method for scanning maps and using the map data to help in an analysis of a disparity image generated with a stereo pair of aerial images. (Roux; abstract; introduction; building 3-D description; conclusion). However, Roux neither discloses nor suggests comparing three-dimensional data that has been generated from aerial images obtained during two different time periods. Also, the map data in Roux is never modified to produce modified two-dimensional map data based on a comparison of three-

dimensional data. Instead, Roux is only concerned with the generation of building 3D models by using features from maps to guide the analysis. (Roux; abstract; conclusion).

Therefore, independent claim 1, as amended, is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable.

Independent claim 34 recites a method similar to an operation of the stereo image processing apparatus of claim 1 and, thus, is believed to be allowable for at least the same reasons that claim 1 is believed to be allowable.

Independent claim 67 recites a recording medium in which a program for processing stereo images is recorded for making a computer carry out a process similar to an operation of the stereo image processing apparatus of claim 1 and, thus, is believed to be allowable for at least the same reasons that claim 1 is believed to be allowable.

New independent claim 73 recites a method for correcting two-dimensional map data similar to an operation of the stereo image processing apparatus of claim 1 and, thus, is believed to be allowable for at least the same reasons that claim 1 is believed to be allowable.

The dependent claims are deemed allowable for at least the same reasons indicated above with regard to the independent claims from which they depend.

Conclusion:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to

Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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